

WHAT IS CLAIMED IS:

1                   1.       A method for screening compounds for biological activity comprising:  
2                   a) selecting a test library of compounds;  
3                   b) forming a first analytical model using a first recursive partitioning process  
4 using a digital computer, wherein the first recursive partitioning process is performed on at  
5 least some of the compounds in the test library of compounds;  
6                   c) forming a second analytical model using a second recursive partitioning  
7 process using the digital computer, wherein the second recursive partitioning process is  
8 performed on at least some of the compounds in the test library of compounds; and  
9                   d) determining a consensus compound set using at least the first analytical  
10 model and the second analytical model.

1                   2.       The method of claim 1 further comprising:  
2                   forming a third analytical model using a third recursive partitioning process  
3 using the digital computer, wherein the third recursive partitioning process is performed on at  
4 least some of the compounds in the test library of compounds; and  
5                   wherein determining the consensus compound set further includes using the  
6 third analytical model in addition to the first analytical model and the second analytical  
7 model.

1                   3.       The method of claim 1 wherein the compounds that are used to form  
2 the first and second analytical models are the same.

3                   4.       The method of claim 1 wherein the compounds that are used to form  
4 the first and the second analytical models are different.

1                   5.       The method of claim 1 wherein the compounds that are used to form  
2 the first and the second analytical models are the same and constitute a training set of the  
3 library of compounds.

1                   6.       The method of claim 1 wherein test library of compounds comprise ion  
2 channel modulators.

1                   7.       The method of claim 1 wherein d) is performed by the digital  
2 computer.

1                    8.        The method of claim 1 wherein determining the consensus compound  
2 set includes identifying compounds that are predicted to be active by both the first analytical  
3 model and the second analytical model.

1                    9.        A computer readable medium comprising:  
2                    a) code for selecting a test library of compounds;  
3                    b) code for forming a first analytical model using a first recursive partitioning  
4 process using a digital computer, wherein the first recursive partitioning process is performed  
5 on at least some of the compounds in the test library of compounds;  
6                    c) code for forming a second analytical model using a second recursive  
7 partitioning process using the digital computer, wherein the second recursive partitioning  
8 process is performed on at least some of the compounds in the test library of compounds; and  
9                    d) code for determining a consensus compound set using at least the first  
10 analytical model and the second analytical model.

1                    10.      The computer readable medium of claim 9 further comprising:  
2                    code for forming a third analytical model using a third recursive partitioning  
3 process using the digital computer, wherein the third recursive partitioning process is  
4 performed on at least some of the compounds in the test library of compounds; and  
5                    wherein determining the consensus compound set further includes using the  
6 third analytical model in addition to the first analytical model and the second analytical  
7 model.

1                    11.      The computer readable medium of claim 9 wherein the compounds that  
2 are used to form the first and second analytical models are the same.

1                    12.      The computer readable medium of claim 9 wherein the compounds that  
2 are used to form the first and the second analytical models are different.

1                    13.      The computer readable medium of claim 9 wherein the compounds that  
2 are used to form the first and the second analytical models are the same and constitute a  
3 training set of the library of compounds.

1                    14.      The computer readable medium of claim 9 wherein test library of  
2 compounds comprise ion channel modulators.

1                    15.     The computer readable medium of claim 9 wherein the digital  
2 computer is embodied by two or more computational apparatuses.

1                    16.     The computer readable medium of claim 9 wherein determining the  
2 consensus compound set includes identifying compounds that are predicted to be active by  
3 both the first analytical model and the second analytical model.